

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (currently amended) A solid, comprising:

a single layer of tungsten oxide on a support of zirconia and/or titanium dioxide, wherein,

~~the amount of tungsten having~~ in the tungsten oxide that has a tetrahedral coordination form deposited on the support is before and after calcination is present in an amount between 10% to 25% by weight relative to the total mass of the support, and ~~wherein~~

the solid is obtained by anion exchange between the zirconia and/or the titanium dioxide and peroxotungstic acid in an acid medium having a pH lower than 3.

2. (previously presented) The solid according to claim 1, wherein:

a) the tungsten has tetrahedral coordination before and after calcination; and

b) the specific surface-area of the solid, after heating to a temperature of less than 800°C, is between 50 and 300m²/g.

3. (previously presented) The solid according to claim 1, wherein:

a) the tungsten has a tetrahedral coordination, before and after calcination;

b) the specific surface-area of the solid, after heating to a temperature of less than 800°C, is between 50 and 300m²/g;

c) the solid has a total acidity, measured by means of adsorption of ammonia, of between 0.1 and 0.5mmol/g, after heating to a temperature of less than 800°C.

4-5. (cancelled)

6. (previously presented) The solid according to claim 1, wherein the support is a zirconia support.

7. (previously presented) The solid according claim 1, further comprising one or more metals selected from the group consisting of platinum, rhodium, cobalt, palladium, nickel and iron.

8. (previously presented) The solid according to claim 1, having an activation and/or regeneration temperature less than 800°C.

9. (previously presented) A process for preparing the solid according to claim 1, wherein a single layer of WO_4^{2-} ions is deposited on the zirconia support.

10. (previously presented) A process according to claim 9, comprising the steps of:

oxidising tungstic acid into peroxotungstic acid ($\text{H}_2\text{W}_2\text{O}_{11}$); exchanging anions in an acid medium of less than pH 3 between the solution of peroxotungstic acid obtained in this manner and a hydrated zirconia (ZrO_2) and/or hydrated titanium dioxide (TiO_2) support; and

recovering the tungsten/zirconia and/or titanium dioxide solid.

11. (previously presented) Process according to claim 9, comprising the steps of:

oxidising hydrated tungsten trioxide (WO_3) in the presence of an oxidation agent;

exchanging anions in an acid medium less than pH 3 between the solution of peroxotungstic acid obtained in this manner and a hydrated zirconia (ZrO_2) and/or titanium dioxide (TiO_2) support; and

recovering the tungsten/zirconia and/or the titanium dioxide solid.

12. (previously presented) A method of catalyzing reactions of oxidation, epoxidation, hydrodesulphuration, isomerisation of paraffins and olefins, hydrogenation of aromatic compounds, oxidation of sulphurous compounds or olefins, said method comprising using the solid according to claim 1 as the catalyst in said reactions.

13. (previously presented) The method according to claim 12 wherein the catalysed reaction is an acid-catalysed reaction.

14. (previously presented) The method according to claim 12, wherein the reaction is a catalytic oxidation reaction of sulphurous derivatives present in hydrocarbons, before or after refinement.

15. (previously presented) The method according to claim 12, wherein said is for desulphurising hydrocarbons and fuels, petroleums, kerosenes and gas oils.

16. (previously presented) The method according to claim 12, wherein the reaction is a catalytic oxidation reaction of benzothiophenes and/or dibenzothiophenes, substituted or non-substituted.

17. (previously presented) A process for desulphurisation by oxidising compounds or compositions containing sulphurous compounds, said process comprises the steps of:

a) bringing the compound or composition to be desulphurised into contact with an oxidising agent and a solid comprising a single layer of tetrahedral tungsten deposited on a zirconia and/or titanium dioxide support;

b) carrying out the oxidation reaction in a suitable solvent, preferably at atmospheric pressure and at a suitable temperature, preferably between 20°C and the boiling temperature of the solvent; and

c) removing the oxidation products from the initial compound or composition.

18. (previously presented) The process according to claim 17, wherein the support is a zirconia support.

19. (previously presented) The process according to claim 17, wherein the compounds or the compositions to be desulphurised are refined or non-refined products resulting from the distillation of crude petroleum, hydrocarbons and fuels, petroleums, kerosenes and/or gas oils.

20. (previously presented) The process according to claim 17, wherein the compounds are thiophenic derivatives,

benzothiophenes, dibenzothiophenes and/or derivatives thereof, that are optionally substituted.

21. (previously presented) The process according to claim 17, wherein the oxidising agent is selected from peroxides, hydrogen peroxide or tert-butyl hydroperoxide, said oxidising agents being able to be used alone or in admixture.

22. (previously presented) The process according to claim 17, wherein the solvent of the reaction is selected from the compound or composition to be processed, water, alkanes, alkanols, and/or polar solvents, said solvents being able to be used alone or in admixture.

23. (previously presented) The process according to claim 17, wherein said process is carried out in a homogeneous, heterogeneous, monophasic, bi-phasic or tri-phasic medium.

24. (previously presented) The process according to claim 17, wherein the ratio of oxidant/compounds to be oxidised is between 100/1 and 1/100, preferably between 100/1 and 1/1, further preferably between 20/1 and 1/1 and quite particularly between 10/1 and 2/1.

25. (previously presented) The process according to claim 17, wherein the oxidation product is removed from the reaction medium in the course of its formation.

26. (previously presented) A Desulphurised fuel which is substantially produced according to the process described in claim 17.

27. (previously presented) The fuel according to claim 26, wherein said fuel is gas oil.

28. (previously presented) The solid according to claim 1, wherein the amount of tungsten, under tetrahedral form, deposited on the surface is between 15% to 25% by weight relative to the total mass of the support.

29. (previously presented) The solid according to claim 2, wherein the temperature of said heating is less than 700°C.

30. (previously presented) The solid according to claim 29, the temperature of said heating is less than 600°C.

31. (previously presented) The solid according to claim 2, wherein the specific surface-area of the solid, after said heating, is between 65 and 200m²/g.

32. (previously presented) The solid according to claim 31, wherein the specific surface-area of the solid, after said heating, is between 86 and 150m²/g.

33. (previously presented) The solid according to claim 3, wherein the temperature of said heating in b) is less than 700°C.

34. (previously presented) The solid according to claim 33, wherein said heating in b) is at a temperature less than 600°C.

35. (previously presented) The solid according to claim 3, wherein the specific surface-area of the solid, after said heating, is between 65 and 200m²/g.

36. (previously presented) The solid according to claim 35, wherein the specific surface-area of the solid, after said heating, is between 86 and 150m²/g.

37. (previously presented) The solid according to claim 3, wherein the total acidity in c) is between 0.2 and 0.4 mmol/g.

38. (previously presented) The solid according to claim 37, wherein the total acidity in c) is between 0.2 mmol/g and 0.4 mmol/g.

39. (previously presented) The solid according to claim 38, wherein the total acidity in c) is approximately 0.35 mmol/g.

40. (previously presented) The solid according to claim 38, wherein said heating in c) is at a temperature less than 700°C.

41. (previously presented) The solid according to claim 38, wherein said heating in c) is at a temperature less than 600°C.

42. (previously presented) The solid according to claim 8, having an activation and/or regeneration temperature less than 700°C.

43. (previously presented) The solid according to claim 42, having an activation and/or regeneration temperature less than 600°C.